THE STANDARDS FORUM

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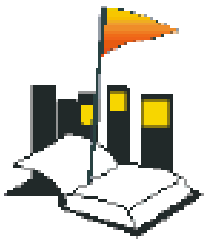
Your publication for news about the DOE Technical Standards Program

Inside this issue:

Performance-Based Standards: Questions and Answers



Reprinted with permission from Suriya Ahmad, Nuclear Standards News Editor, American Nuclear Society (ANS), Nuclear Standards News (NSN) Vol. 33, No. 4, July/August 2002.

The Nuclear Facilities Standards Committee (NFSC) met in June during the ANS Annual Meeting in Hollywood, FL. The issue of performance-based standards was on the agenda. The NFSC is trying to determine which of its standards might become performance based. Development of performance-based standards involves a different way of thinking, and few people understand yet what this entails. NFSC member N. Prasad Kadambi shares his views on performance-based standards with NSN.

What makes a standard performance based?

A performance-based standard is one which focuses on attaining specific objectives. Identifying the objectives clearly is one of the most important things that the

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Position Statement on The Adoption of a Uniform Quality Standard For Metrology and Testing Laboratories: September 2002

Please note that this position paper by the DOE Metrology/Accreditation Committee is not intended to state DOE policy. Rather, it is a recommendation by subject matter experts from throughout the complex, including both DOE personnel and contractors. Nor does it state an official position or recommendation by the Technical Standards Program Office (TSPO). However, the DOE metrology/accreditation community appears largely in favor of the adoption of ISO/IEC 17025:1999; therefore, we encourage full and careful consideration of that consensus—Richard J. Serbu (DOE/HQ), Manager, TSPO.

Introduction

During the March 2002 annual meeting of the DOE Metrology/Accreditation Committee (the Committee), the need to redefine the minimum common set of guidelines, based on national and international standards by utilizing ISO/IEC 17025:1999, was identified.

Background

During the second annual meeting of the DOE Metrology Committee in 1998, a uniformity working group developed the following task statement: **"To determine a minimum common set of guidelines, based on national and international standards (utilizing ANSI/NCSL Z540-1:1994 and ISO Guide 25), that are acceptable to all Department of Energy programs."**

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Performance-Based Standards . . . (Continued from page 1)

standard's working group does. The group also clearly defines the attributes of the successful outcome which is expected to result from use of the standard. In addition to defining the attributes, a performance-based standard develops and provides measures for the attributes of success to the extent practicable. The measures may be qualitative, quantitative, or a combination of the two.

How is a performance-based standard different from a conventional standard?

A performance-based standard focuses much more attention on defining success and developing measures of success than on identifying failure modes. Hence, the fo*cus is not* on "worst case" scenarios. Many standards may already be quite performance based because the user is drawn to those factors which are most important to achieving the objectives of the standard. On the other hand, quite a few standards only worry about all the things that can go wrong, and attempt to build barriers against them. Experience shows that this approach (especially when it is the only approach used) leads to inefficiencies because, quite often, the barriers are much more in number and stringency than they need to be to provide a reasonable assurance of success. In the standards world, this frequently translates to use of the words "shall," "should," or "may."

What is the benefit from making a standard performance based?

The main benefits occur in the areas of effectiveness, efficiency, and transparency. Effectiveness is defined here as the attribute of clearly defining the expectation from an action and knowing from the results of the action whether the expectations were attained or not, in an objective manner. Observation of the performance measures provides the linkage to success and to objectivity.

Some amount of subjectivity will exist when qualitative measures are employed. However, in a performance-based approach, the source of the subjectivity is much more evident than in a prescriptive (i.e., compliance-based, one-size-fits-all) approach.

"A performance-based standard focuses much more attention on defining success and developing measures of success than on identifying failure modes."

In a performance-based approach, a degree of margin will also be assured so that if the performance measure deviates from the acceptable range, some kind of signal would be triggered for corrective action before success is seriously jeopardized. The emphasis on objectivity as opposed to subjectivity is quite important. Although subjectivity can never be eliminated when dealing with qualitative information, explicit identification of attributes can mitigate subjectivity's adverse effects.

Efficiency comes about as a result of working in success space, as opposed to failure space. The focus on successful results translates into flexibility, which frees up human creativity to seek solutions to problems using innovative technologies or free-wheeling combinations of currently employed measures. In practice, this could lead to much less effort for maintaining a standard. The maintenance cycle time could be increased considerably. However, there is no guarantee that this will always happen. Much judgment needs to be exercised to assess the potential improvements in efficiency. Generally, a working group setting with representation from diverse perspectives is the best avenue for exercising such judgment. Considerations which now go into determining the right balance of interests may need to be modified to reflect a broader range of inputs.

Transparency results from making explicit what is frequently implicit. A key factor is explicitly identifying constraints and boundary conditions. Sometimes these are regulatory, but most often they are limits on hardware, humans, and data. Recognition of such constraints should result in explicit articulation of how much risk of failure is being accepted. If failure is intolerable, it should be so stated and the consequences subjected to some scrutiny.

What is the role of probabilistic risk assessment (PRA) in a performance-based standard?

When a PRA is available, the most significant information arising from it is often that it becomes possible to make an objective assessment of the impediments to accomplishing the objectives of an activity. We generally use the term "risk contributors" and "importance functions" to express this concept. There exists a parallel concept, somewhat analogous to a mirror image of a PRA, called Top Event Prevention Analysis (TEPA), which sometimes provides more insights and could be more useful to developing performance-based approaches. However, more research is needed to fully understand TEPA's potential. If the impediments are identified but cannot be overcome with absolute certainty, the PRA or TEPA will enable an estimate of how much uncertainty is tolerable to address each risk contributor. Also, the sources of the uncertainty can be more explicitly identified using the structure of the PRA or TEPA.

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Performance-Based Standards . . . (Continued from page 2)

The PRA or TEPA also enables the identification of the measures of success for rare events because, by definition, there will always be a lack of data in such cases. Although it can be quite complex, the framework of a PRA or TEPA makes it possible to find appropriate measures to assess performance in the field. It involves creating a hierarchy of objectives with potentially complex relationships among the hierarchical elements. If the effort is made, the payoff can be high in terms of establishing the basic criteria for implementing a performance-based approach so as to gain lower-cost solutions to problems without imposing unnecessary conservatism, and providing valuable flexibility.

What is the role of the Nuclear Regulatory Commission's research in the development of high-level guidelines for performance-based activities?

The basic framework of the guidelines enables putting into practice the abstract theory described above. The detailed guidelines are probably applicable only to NRC work, but the general concepts can also be applied to standards activities.

The guidelines are divided into three main groupings. The first group asks the question, "Can the activity being addressed be made performance based?" The second group asks the question, "Is it worth doing?" The third group asks the question, "Are we conforming to the constraints and boundary conditions?" In a sense, the third group of guidelines is just double-checking to confirm that the first two groups were treated correctly.

Let us consider an existing standard that is being modified and a decision has been made to make it as performance-based as possible. Being an existing standard, it is assumed here that a track record has been built on past experience with the standard, even if it is only in the recollection of experience by people. Before addressing the first group of guidelines, the question that should be posed is, "Are there inefficiencies in the way the standard is working out, with the cause being attributable to excessive prescriptiveness and lack of flexibility?" If enough people feel that the answer is affirmative, the next question can be, "What is the motivation or incentive for doing something about it?" Again, if a working group feels that there is sufficient incentive to proceed, the next question is, "Are there any obvious prohibitions against making any basic changes to the standard?"

"Once a standard is developed with properly identified objectives, there would be no need to make modifications unless the objectives themselves change, which is highly unusual."

It is quite evident that these questions mimic the groups of guidelines, but are posed at a higher level of information aggregation. That is, it is a first iteration using rough information and relying on the judgment of people who are reasonably knowledgeable. Every iteration can be expected to get into more depth and detail. Generally, the main incentive for making something more performance-based is to increase flexibility. Lack of flexibility arises from the kind of prescriptiveness that comes about with arbitrarily sprinkling "shall" around in any procedure, whether it is needed or not.

An example of a performance-based effort may be the Nuclear Facilities Standards Committee's effort to reduce delinquent standards and improve on-time performance. NFSC's initial response was to come out with procedures that stated that committee members and chairs "shall" do various things within strictly specified time limits. NFSC could have taken the approach that success for the effort is that only X% of standards would be allowed to go delinquent and that Y% of standards development will be on time. The objective is, of course, to set a standard of excellence, but the top event that is required to be prevented is losing NFSC's ANSI accreditation. It is quite likely that many fewer "shalls" could have yielded success. If only those steps in the procedures which brought the process somewhat close to the brink of losing accreditation were considered, more flexibility would result. If indicators are developed at a lower level (which obviously exist because action based on objective data is being taken) that something has gone awry, there would be sufficient time to take corrective action.

How would the adoption of a performance-based approach affect ANS's standards activities?

The adoption of a performance-based approach would help make the ANS standards effort more effective and efficient. The standards development process itself can be better standardized. Once a standard is developed with properly identified objectives, there would be no need to make modifications unless the objectives themselves change, which is highly unusual. Hence, a performance-based standard can be expected to be valid for much longer periods. The interfaces between the standards would be delineated much more clearly. The ANS volunteer morale may improve, because when people take on responsibilities and know that they are accountable to certain indicators which are common knowledge, they will feel more motivated to get the job done. A system could also be instituted where success is recognized and rewarded.

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Performance-Based Standards . . . (Continued from page 3)

What can an interested member of the standards community do to help with ANS's performance-based standards initiative?

The working group under NFSC leading this effort is looking for volunteers who: (1) have used a wide variety of standards (design, construction, inspection, operation, etc.) and know their strengths and weaknesses; (2) have participated in multidisciplinary standards development; and (3) have experience in form, content, and style for preparing standards. Please contact me, N. Prasad Kadambi, by phone at (301) 415-5896, or by e-mail at **npk@nrc.gov**, if interested.

Position Statement of the Adoption . . . (Continued from page 1)

The uniformity working group surveyed 30 DOE metrology laboratories in order to obtain information about the standards with which laboratories had to comply. Eighteen laboratories responded to the survey. Of the eighteen laboratories, eleven laboratories complied with ANSI/NCSL Z540-1:1994 and two laboratories complied with ISO Guide 25; the other laboratories complied with other standards at that time. Based on the recommendation of the working group, the DOE Metrology/Accreditation Committee adopted a position statement that calibration laboratories supporting DOE Programs utilize ANSI/NCSL Z540-1 1994 as their requirements document, while testing and analytical laboratories supporting DOE Programs utilize ISO Guide 25 as their requirements document.

"Adoption of this new standard will allow for greater uniformity between DOE laboratories and their suppliers, as well as ensuring compatibility with both national and international standards."

Revised Recommendation

Based on a review of the current situation both nationally and internationally, the Committee now recommends the use of ISO/IEC 17025:1999 [or the equivalent American National Standard ANSI/ISO/IEC 17025:2000]. This revised standard should replace both ANSI/NCSL Z540-1 as the standard for calibration laboratories and ISO Guide 25 as the standard for testing and analytical laboratories throughout DOE. Adoption of this new standard will allow for greater uniformity between DOE laboratories and their suppliers, as well as ensuring compatibility with both national and international standards. Thus, adoption of the new standard would result in significant benefits to the DOE and its metrology, testing, and analytical laboratories. The benefits are summarized below.

Benefits

1. Adoption of this voluntary standard allows the DOE to comply with both the Technology Transfer Act (PL 104-113) and OMB Circular A-119, in the areas of testing and calibration laboratory requirements.
2. Compliance with this standard prepares DOE laboratories for laboratory accreditation, which is becoming the accepted method for recognizing laboratory competence.
3. Compliance with this standard for all participating DOE programs means reduced costs associated with the maintenance of documentation and separate procedures and processes for metrology and testing laboratories, especially if they support more than one DOE program, or support other federal agencies.
4. Compliance with ISO 17025 requires technical competency, which should result in improved laboratory performance.
5. Acceptance of DOE laboratory measurements and tests in international circles is dependent on compliance with ISO 17025.
6. By accepting this standard, DOE is aligning itself with the national and international calibration and testing communities.
7. By adopting this standard, the credibility of DOE programs is enhanced in the eyes of the public sector, including industry and public interest groups.
8. Since this standard is compatible with current industry practice, DOE will reduce costs when teaming with industry on joint projects.

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Opportunities to Learn More About the World of Standards

The Department of Energy (DOE) is strongly committed to the use of voluntary consensus standards (VCSs), consistent with the policy and requirements established in the National Technology Transfer and Advancement Act of 1995 (NTTAA) [also known as Public Law 104-113] and the Office of Management and Budget (OMB) Circular A-119. These requirements direct Federal agencies to preferentially use VCSs and to work with Standards Development Organizations (SDOs) to develop such standards when they are needed. The processes and requirements for implementing these Federal level requirements, and for managing our own standards development and standards maintenance needs within DOE, are contained in the DOE Technical Standards Program (TSP) Order (DOE O 252.1), Guide (DOE G 252.1-1), and associated TSP Procedures (TSPPs). These TSP documents can be accessed from the TSP Web site at **http://tis.eh.doe.gov/techstds**. (Click on "Program Overview and Guidance" and select the appropriate document from the list on the left side of the browser page.)

For a broad orientation on the NTTAA/Public Law 104-113, go to the National Institute of Standards and Technology (NIST) Web site at **http://ts.nist.gov/ts/htdocs/210/nttaa/nttaa.htm**. Plans are being made to link the NTTAA information from the NIST Web site to the DOE TSP Web site in the near future.

For many people, the general world of standards may seem too broad and too diverse to comprehend without extensive experience. Even for persons with extensive experience on SDO committees and working groups, the "big picture" of standards may be unclear. The American National Standards Institute (ANSI)—the umbrella organization for all major U.S. SDOs—offers initiates, acolytes, and experts much useful standards-related information on its Web site at **http://www.ansi.org/**. At the present time, ANSI is offering a FREE online course on "Why Standards Matter." The introductory course explains much about the world of standards, including the role of government. You can enroll in the course at **http://www.standardslearn.org/**. (Click on "Courses," select "Why Standards Matter," and follow the instructions carefully.) You can even take a free exam! The next ANSI e-learning course under development highlights the national and international standards development process and is intended for those who want to go beyond the basics.

I encourage you to access the information on the NTTAA Web site and to take the ANSI course to help further your understanding of how DOE and its contractors develop and use voluntary consensus standards. Again, this very useful standards information can be accessed as follows:

- NTTAA at NIST: **http://ts.nist.gov/ts/htdocs/210/nttaa/nttaa.htm**
- ANSI "Why Standards Matter" Course (FREE!): **http://www.standardslearn.org/**

— Rick Serbu

Position Statement of the Adoption . . . (Continued from page 4)

Cost Impact

Due to similarities between the requirements of ANSI/NCSL Z540-1: 1994, ISO Guide 25, and ISO/IEC 17025: 1999, additional costs to implement the proposed standard will be negligible. Required minor changes to quality system documentation can be accomplished on a phased basis or through simple "pen and ink" changes until the documents are due for normal review and updating. The changes do not require additional equipment, staffing or technical training.

Conclusion

By adopting ISO/IEC 17025:1999(E), "General Requirements for the Competence of Testing and Calibration Laboratories" throughout all DOE Programs, the DOE would be strengthened technically, brought into compliance with public law, and be in harmony with both the national and international testing and calibration communities.

Reference

ISO/IEC 17025:1999(E), "General Requirements for the Competence of Testing and Calibration Laboratories," 1999.

Welcome Aboard the TSMC!

The Technical Standards Managers (TSMs) are the backbone of the DOE Technical Standards Program!

These knowledgeable individuals serve as their organization's standards point of contact and contribute to the coordination of Department-wide TSP activities. A great deal of their work time is spent in assuring that standards activities take place in a manner that will promote safe, economical, and efficient operations locally and across the DOE complex.

With nearly 90 active and mobile people involved in TSM activities, it can be a daunting task just to keep up with the retirements and reassignments affecting the TSM roster. This "Welcome Aboard" feature is designed to introduce you to the new TSMs and help you keep abreast of the rapidly changing make-up of the Technical Standards Managers' Committee (TSMC).

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DOE Consolidates Mailing Addresses

Effective August 5, 2002, the U.S. Department of Energy (DOE) began redirecting all U.S. mail to the Washington, D.C. address**.** In the continuing effort to provide the best possible protection against threats that target the mail stream, this address change is deemed to be necessary. The current Germantown zip code falls outside the range in which the U.S. Postal Service irradiates mail. Therefore, DOE requests your assistance in addressing all Headquarters mail to the Department's Washington, D.C. address to assure irradiation and/or inspection by the U.S. Postal Service. DOE does not anticipate any delays in delivery due to this change.

The Technical Standards Program manager's address would be as follows:

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THE STANDARDS FORUM

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Distribution: *The Standards Forum* is an electronic newsletter available from the TSP Web Site (**http://tis.eh.doe.gov/techstds/**). To update your mailing and e-mail addresses, please contact Debbie Queener, ORNL, (865) 574-0398, Fax (865) 574-8481 **queenerds@ornl.gov.**

Comments: If you have any questions or comments please contact Rick Serbu, EH-53, (301) 903-2856, **Richard.Serbu@eh.doe.gov**. If you have any questions or comments on DOE Technical Standards projects, please call Don Williams, ORNL, (865) 574-8710, **williamsdljr@ornl.gov.**

Publication: ORNL and DOE's ES&H Technical Information Services posts *The Standards Forum* quarterly for the DOE Technical Standards Program at **http://tis.eh.doe.gov/techstds/**.

Standards Actions—December 2002

Visit the Technical Standards Program Web Site at

http://tis.eh.doe.gov/techstds/.

Standards Actions

DOE Technical Standards Program Document Status

11-21-2002

Activity Summary

In Conversion – 4

In Preparation – 48

Out for Comment – 21

Published this Month – 1

5-year Review Status

Revision in Progress – 10

Reaffirmation in Progress – 9

Cancellation Pending – 5

Cancellation in Progress – 1

No Current Action – 21

Inside this issue:

DOE Technical Standards Projects Initiated

If you have any questions or are interested in these projects, please contact the representatives listed below. Complete listings of all DOE Technical Standards projects and their status are given on the DOE Technical Standards Program (TSP) Web Site (**http://tis.eh.doe.gov/techstds/**). To access these lists from the home page, click on DOE Technical Standards, then click on Projects in the left-hand frame to show the links to the project lists.

The following DOE Technical Standards projects were recently initiated:

- *DOE Handbook: Best Practices for Behavior-Based Safety*, Project Number HFAC-0016; Project Contact: Robert M. Waters, U. S. Department of Energy, EH-52, (301) 903-5755, Fax: (301) 903-7773; **Robert.Waters@eh.doe.gov**.
- *Aviation Safety Officer Qualification Standard*, Project Number TRNG-0032; Project Contact: M. Norman Schwartz, U.S. Department of Energy, EH-53, (301) 903-2996, Fax: (301) 903-6172; **Norm.Schwartz@eh.doe.gov**.
- *Aviation Manager Qualification Standard*, Project Number TRNG-0033; Project Contact: M. Norman Schwartz, U.S. Department of Energy, EH-53, (301) 903-2996, Fax: (301) 903-6172; **Norm.Schwartz@eh.doe.gov**.
- *Senior Technical Safety Manager Qualification Standard*, Project Number TRNG-0034; Project Contact: Larry C. Kelly, U.S. Department of Energy, AU-63, (865) 576-1829, Fax: (865) 576-2891; **Kellylc@oro.doe.gov**.

DOE Technical Standards Recently Published

The following DOE Technical Standard was recently published and posted on the TSP Web Site:

- DOE-STD-1157-2002, *Environmental Restoration Functional Area Qualification Standard*, November 2002.

DOE employees and DOE contractors may obtain copies from the ES&H Technical Information Services, U.S. Department of Energy; (800) 473-4375, Fax (301) 903-9823.

Subcontractors and the general public may obtain copies from the U.S. Department of Commerce, Technology Administration, National Technical Information Service, Springfield, VA 22161; (703) 605-6000, Fax (703) 605-6900.

Non-Government Standards

American National Standards Institute

The American National Standards Institute (ANSI) publishes coordination activities of non-Government standards (NGS) biweekly in *ANSI Standards Action.* Recent

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electronic copies (no hardcopies are produced) are available on the ANSI Web site at **http://web.ansi.org/rooms/room_14/**. Electronic back copies are available to ANSI members only. For information on site membership, ask your local ANSI contact. For information on individual or group ANSI membership, contact Susan Bose at (212) 642-4948 or **sbose@ansi.org**.

Hardcopy versions of published non-Government standards listed in this section may be obtained from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, (800) 854-7179, Fax (303) 397-2740, **global@ihs.com**, **http://global.ihs.com**. Electronic delivery of selected documents is available through ANSI at **http://webstore.ansi.org**. Copies of the listed draft standards and the procedure for commenting on them may be obtained by contacting the standards developing organization.

The following listings are extracted from *ANSI Standards Action* and are representative of NGS development activities that may be relevant to DOE operations. Refer to *ANSI Standards Action* for a more extensive listing of changes and new publications, standards developing organizations, and additional information about submitting comments. Additional information on ANSI activities and available non-Government standards can be found on the ANSI Web site, **http://www.ansi.org**, or through the National Standards System Network, **http://www.nssn.org**.

The following American National Standards are currently in coordination (comment due dates follow each entry)**:**

- ARI 390-2001, *Single Package Vertical Air-Conditioners and Heat Pumps* (new standard) – January 14, 2003.
- ASHRAE 62h-200x, *Ventilation for Acceptable Indoor Air Quality, Addenda h* (supplement to ANSI/ASHRAE 62-1989) – December 8, 2002.
- ASHRAE 109-1986 (R200x), *Methods of Testing to Determine the Thermal Performance of Flat-Plate Solar Collectors Containing a Boiling Liquid* (reaffirmation of ANSI/ASHRAE 109-1986 (R1996)) – December 30, 2002.
- ASME B30.4-200x, *Portal, Tower, and Pedestal Cranes* (revision of ANSI/ASME B30.4-1996) – December 23, 2002.
- ASME B30.13-200x, *Storage/Retrieval (S/R) Machines and Associated Equipment* (revision of ANSI/ASME B30.13-1996) – January 7, 2003.
- ASME B30.20-200x, *Below-the-Hook Lifting Devices* (revision of ANSI/ASME B30.20-1999) – December 30, 2002.
- ASME PTC 23-200x, *Atmospheric Water Cooling Equipment* (revision of ANSI/ASME PTC 23-1986 (R1997)) – December 31, 2002.
- ASTM E230-200x, *Specification and Temperature – Electromotive Force (EMF) Tables for Standardized Thermocouples* (revision of ANSI/ASTM E230-1998) – December 16, 2002.
- ASTM E456-200x, *Terminology Relating to Quality and Statistics* (new standard) – December 16, 2002.
- ASTM E621-1994 (R200x), *Practice for Use of Metric SI Units in Building Design and Construction* (reaffirmation of ANSI/ASTM E621-1994 (R1999)) – December 16, 2002.
- ASTM E917-200x, *Practice for Measuring Life-cycle Costs of Buildings and Building Systems* (revision of ANSI/ASTM E917-1999) – December 16, 2002.
- ASTM E994-1995 (R200x), *Guide for Calibration and Testing Laboratory Accreditation Systems General Requirements for Operation and Recognition (*reaffirmation of ANSI/ASTM E994-1995) – December 16, 2002.
- ASTM E1169-200x, *Guide for Conducting Ruggedness Tests* (revision of ANSI/ASTM E1169-1997) – December 16, 2002.
- ASTM E1323-1996 (R200x), *Guide for Evaluating Laboratory Measurement Practices and the Statistical Analysis of the Resulting Data* (reaffirmation of ANSI/ASTM E1323-1996) – December 16, 2002.
- ASTM E1325-200x*, Terminology Relating to Design of Experiments* (revision of ANSI/ASTM E1325-1997) – December 16, 2002.
- ASTM E1369-200x, *Guide for Selecting Techniques for Treating Uncertainty and Risk in the Economic Evaluation of Buildings and Building Systems* (revision of ANSI/ASTM E1369-1993) – December 16, 2002.
- ASTM E1488-200x, *Guide for Statistical Procedures to Use in Developing and Applying Test Methods* (revision of ANSI/ASTM E1488-1997) – December 16, 2002.
- ASTM E1626-200x, *Guide for Including Government Procurement Requirements in ASTM Documents* (revision of ANSI/ASTM E1626-1997) – December 16, 2002.

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- ASTM E1728-200x, *Practice for Collection of Settled Dust Samples Using Wipe Sampling Method for Subsequent Lead Determination* (revision of ANSI/ASTM E1728-2002) – December 16, 2002.
- ASTM E2121-200x, *Practice for Installing Radon Mitigation Systems in Existing Low-rise Residential Buildings* (revision of ANSI/ASTM E2121-2002) – December 16, 2002.
- ASTM Z8774Z-200x, *Practice for Periodic Inspection of Building Facades for Unsafe Conditions* (new standard) – December 16, 2002.
- AWS A5.31-1993 (R200x), *Fluxes for Brazing and Braze Welding* (reaffirmation of ANSI/AWS A5.31-1993) – January 14, 2003.
- AWS B5.1-200x, *Specification for the Qualification of Welding Inspectors* (new standard) – December 31, 2002.
- N42.23-1996 (R200x), *Measurement and Associated Instrument Quality Assurance for Radioassay Laboratories* (reaffirmation of ANSI N42.23-1996) – January 7, 2003.
- N42.31-200x, *Measurement Procedures for Resolution and Efficiency of Wide-Bandgap Semiconductor Detectors of Ionizing Radiation* (new standard) – January 7, 2003.
- N323B-200x, *Installed Radiation Protection Instrumentation Test and Calibration – Portable Survey Instruments for Near Background Operation* (new standard) – January 14, 2003.
- UL 1072-200x, *Standard for Safety for Medium-Voltage Power Cables* (revision of ANSI/UL 1072-1988) – December 23, 2002.

The following American National Standards have been approved for publication (Publication is to take place within six months following the date shown. Publication status and ordering information may be obtained from ANSI's Customer Service at (212) 642-4900.)**:**

- ANSI AWWA C303-2002, *Standard for Concrete Pressure Pipe, Bar-Wrapped Steel-Cylinder Type* (revision of ANSI/AWWA C303-1995) – October 29, 2002.
- ANSI Z535.2-2002, *Environmental and Facility Safety Signs* (revision of ANSI Z535.2-1998) – November 7, 2002.
- ANSI/ASME N509-2002, *Nuclear Power Plant Air-Cleaning Units and* Components (revision of ANSI/ASME N509-1989 (R1996)) – November 6, 2002.
- ANSI/ASME QME-1-2002, *Qualification of Active Mechanical Equipment Used in Nuclear Power Plants* (revision of ANSI/ASME QME-1-2000) – October 31, 2002.
- ANSI/ASTM E2148-01, *Guide for Using Documents Related to Metal-Working or Metal Removal Fluid Health and Safety* (new standard) – May 10, 2001.
- ANSI/IEEE C57.106-2002, *Guide for Acceptance and Maintenance of Insulating Oil in Equipment* (new standard) – October 30, 2002.
- ANSI/IEEE 690-1997 (R2002), *Standard for the Design and Installation of Cable Systems for Class 1E Circuits in Nuclear Power Generating Stations* (reaffirmation of ANSI/IEEE 690-1997) – October 29, 2002.
- ANSI/IEEE 741-2002, *Standard Criteria for the Protection of Class 1E Power Systems and Equipment in Nuclear Power Generating* Stations (new standard) – October 22, 2002.
- ANSI/NEMA FB-11-2000, *Plugs, Receptacles, and Connectors of the Pin and Sleeve Type for Hazardous Locations* (new standard) – November 7, 2002.
- ANSI/UL 268-2002, *Smoke Detectors for Fire Protective Signaling Systems* (new standard) – October 30, 2002.

The following international standards are currently in coordination (comment due dates follow each entry)**:**

- ISO/DIS 6406, *Seamless steel gas cylinders – Periodic inspection and testing* – January 30, 2003.
- ISO/DIS 10426-4, *Petroleum and natural gas industries – Cements and materials for weld cementing – Part 4: Preparation and testing of atmospheric foamed cement slurries* – January 23, 2002.
- ISO/DIS 17874-2, *Remote handling devices for radioactive materials – Part 2: Mechanical master-slave manipulators* – February 13, 2003.
- ISO/DIS 22188, *Monitoring for inadvertent movement and illicit trafficking of radioactive material* – February 13, 2003.

The following newly published international standards are available:

- IEC 60052 Ed. 3.0 b:2002, *Voltage measurement by means of standard air gaps.*

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- IEC 60079-14 Ed. 3.0 b:2002, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines).*
- IEC 60721-1 Ed. 2.2 b:2002, *Classification of environmental conditions – Part 1: Environmental parameters and their severities.*
- IEC 61010-2-032 Ed. 2.0 b:2002, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement.*
- ISO 6605:2002, *Hydraulic fluid power – Hoses and hose assemblies – Test methods.*
- ISO 14171:2002, *Welding consumables – Wire electrodes and wire-flux combinations for submerged arc welding of non alloy and fine grain steels – Classification*.
- ISO 14341:2002, *Welding consumables – Wire electrodes and deposits for gas shielded metal arc welding of non alloy and fine grain steels – Classification*.
- ISO 14877:2002, *Protective clothing for abrasive blasting operations using granular abrasives*.
- ISO 18413:2002, *Hydraulic fluid power – Cleanliness of parts and components – Inspection document and principles related to contaminant collection, analysis and data reporting.*
- ISO/IEC 15288:2002, *Systems engineering – System life cycle processes*.

American National Standards Projects Initiated

The following is a list of proposed new American National Standards or revisions to existing American National Standards submitted to ANSI by accredited standards developers. DOE employees or contractors interested in participating in these activities should contact the appropriate standards developing organization. DOE-TSL-4 lists the DOE representatives on NGS committees. If no DOE representative is listed, contact the TSPO for information on participating in NGS activities**.**

American Petroleum Institute (API)

Office: 1220 L Street NW
Washington, DC 20005
Fax: (202) 962-4797
Contact: Andrea Johnson, **johnsona@api.org**

- API RP 1162-200x, *Public Awareness Programs for Pipeline Operators* (new standard).

Alliance for Telecommunications Industry Solutions (ATIS (ASC T1))

Office: 1200 G Street NW, Suite 500
Washington, DC 20005
Fax: (202) 347-7125
Contact: Susan Carioti, **scarioti@atis.org**

- T1.307-200x, *Telecommunications – Fire Resistance Criteria – Ignitability Requirements for Equipment Assemblies, Ancillary Non-Metallic Apparatus and Fire Spread Requirements for Wire and Cable* (revision of ANSI T1.307-1997).

Electronic Industries Alliance (EIA)

Office: 2500 Wilson Blvd., Suite 300
Arlington, VA 22201-3834
Fax: (703) 907-7549
Contact: Cecelia Yates, **cyates@eia.org**

- EIA 622-200x, *Glossary of Electrical Connector Related Terms* (revision of ANSI/EIA 622-1995).

Institute of Electrical and Electronics Engineers (IEEE)

Office: 445 Hoes Lane, P.O. Box 1331
Piscataway, NJ 08855-1331
Fax: (732) 562-1571
Contact: Naeem Ahmad, **n.ahmad@ieee.org**

- IEEE 1185-200x, *Guide for Installation Methods for Generating Station Cables* (revision of ANSI/ IEEE 1185-1994 (R2000)).
- IEEE 1634-200x, *Standard for Common Data Dictionary for Use in Intelligent Transportation Systems* (new standard).

ASTM International

Standards activities of ASTM International (ASTM) are published monthly in ASTM *Standardization News.* Orders for subscriptions or single copies of ASTM *Standardization News* may be submitted to ASTM, Subscription Dept.-SN, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. For information regarding ASTM membership, contact the Membership Services Department at (610) 832-9691, Fax: (610) 832-9667. ASTM publications may be ordered from the ASTM Customer Services Department at (610) 832-9585, Fax: (610) 832-9555. Comments on listed draft standards may be submitted by contacting the ASTM Standards Coordination Department at the above address. Questions may be addressed to the Technical Committee Operations Division at (610) 832-9672, Fax: (610) 832-9666. Additional information on ASTM activities is available on the ASTM Web site (**http://www.astm.org**). The following listings are extracted

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from ASTM *Standardization News* and are representative of NGS development activities that may be relevant to DOE operations.

The following ASTM standards are currently in coordination (the due date for all items is December 10, 2002):

- C 781-96, *Practice for Testing Graphite and Boronated Graphite Components for High-Temperature Gas-cooled Nuclear Reactors* – revised standard.
- E 176-01a, *Terminology of Fire Standards* – revised standard.
- E 1290-99, *Test Method for Crack-tip Opening Displacement (CTOD) Fracture Toughness Measurement* – revised standard.
- New Standard, *Guide to ASTM Standard Test Methods* – ref. F2114.
- New Standard, *Practice for Characterization of Coatings Using Conformable Eddy-current Sensors Without Coating Reference* Standards – ref. Z8387Z.
- New Standard, *Practice for Examination of Welds Using the Alternating Current Field Measurement Technique* – ref. Z8846Z.

The following newly published standards are available from ASTM:

- C 441-02, *Test Method for Effectiveness of Mineral Admixtures or Ground Blast-furnace Slag in Preventing Excessive Expansion of Concrete Due to the Alkali-Silica Reaction* – revised standard.
- C 805-02, *Test Method for Rebound Number of Hardened Concrete* – revised standard.
- C 822-02 *Terminology Relating to Concrete Pipe and Related Products* – revised standard.
- C 881/C 881M-02, *Specification for Epoxy-Resin-Base Bonding Systems for Concrete* – revised standard.
- C 918-02, *Test Method for Measuring Early-Age Compressive Strength and Projecting Later-Age Strength* – revised standard.
- C 1161-02b, *Test Method for Flexural Strength of Advanced Ceramics at Ambient Temperature* – revised standard.
- C 1539-02, *Test Method for Determination of Technetium-99 in Uranium Hexafluoride by Liquid Scintillation Counting* – new standard.
- D 91-02, *Test Method for Precipitation Number of Lubricating Oils* – revised standard.
- D 396-02, *Specification for Fuel Oils* – revised standard.
- D 513-02, *Test Methods for Total and Dissolved Carbon Dioxide in Water* – revised standard.
- D 870-02, *Practice for Testing Water Resistance of Coatings Using Water Immersion* – revised standard.
- D 974-02, *Test Method for Acid and Base Number by Color-Indicator Titration* – revised standard.
- D 1687-02, *Test Methods for Chromium in Water* – revised standard.
- D 1735-02, *Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus* – revised standard.
- D 3645-02, *Test Methods for Beryllium in Water* – revised standard.
- D 4753-02, *Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing* – revised standard.
- D 5462-02, *Test Method for On-line Measurement of Low-level Dissolved Oxygen in Water* – revised standard.
- D 5831-02, *Test Method for Screening Fuels in Soils* – revised standard.
- D 6239-02, *Test Method for Uranium in Drinking Water by High-Resolution Alpha-Liquid-Scintillation Spectrometry* – revised standard.
- D 6792-02, *Guide for a Quality System in Petroleum Products and Lubricants Testing Laboratories* – new standard.
- D 6802-02, *Test Method for Determination of the Relative Content of Dissolved Decay Products in Mineral Insulating Oils by Spectrophotometry* – new standard.
- E 6-02, *Terminology Relating to Methods of Mechanical Testing* – revised standard.
- E 220-02, *Test Method for Calibration of Thermocouples by Comparison Techniques* – revised standard.
- E 748-02, *Practices for Thermal Neutron Radiography of Materials* – revised standard.
- E 1316-02a, *Terminology for Nondestructive Examinations* – revised standard.
- E 1391-02, *Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Test* – revised standard.

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- E 1728-02, *Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination* – revised standard.
- E 1804-02, *Practice for Performing and Reporting Cost Analysis During the Design Phase of a Project* – revised standard.
- E 1953-02, *Practice for Description of Thermal Analysis Apparatus* – revised standard.
- E 2207-02, *Practice for Strain-Controlled Axial-Torsional Fatigue Testing with Thin-Walled Tubular Specimens* – new standard.
- E 2208-02, *Guide for Evaluating Non-Contacting Optical Strain Measurement* – new standard.
- F 788/F 788M-02, *Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series* – revised standard.

Comments, Questions, and Addresses

Comments: If you have any questions or comments, please contact Rick Serbu, EH-53, Manager, DOE Technical Standards Program Office (TSPO), (301) 903-2856, Fax (301) 903-6172, **Richard.Serbu@eh.doe.gov**.

Addresses: *Standards Actions* and *The Standards Forum* are electronic newsletters available on the TSP Web Site (**http://tis.eh.doe.gov/techstds/**). To update your mailing and e-mail addresses, please contact Debbie Queener, ORNL, (865) 574-0398, Fax (865) 574-8481, **queenerds@ornl.gov**.

Technical Standards Activities: The TSPO would like to be kept informed of the status of technical standards that are being prepared or coordinated for DOE. Please provide this information to the TSPO at (865) 574-0398, **queenerds@ornl.gov**.

The World of Standards—

NEWS BRIEFS

IEEE-SA Launches New Standards Development Web Site

An excellent new source is now available to developers of Institute of Electrical and Electronics Engineers (IEEE) standards. The IEEE Standards Association (IEEE-SA) has launched a Web site to support individuals and companies participating in the creation of standards at the IEEE.

IEEE Standards Development Online consolidates the critical mass of standards development process and procedure information into one location on the IEEE-SA Web site. It also provides informative training modules and information for each step in the IEEE-SA standards development process. The site covers in detail how to initiate a standards project at the IEEE and how to write a standard. It describes the balloting or voting process of standards, as well as how standards get published and the various services the IEEE-SA offers to its standards development groups.

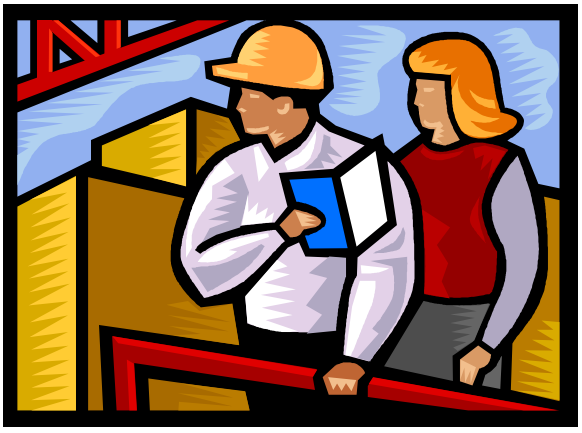
The launching of this Web site is the first step in IEEE-SA's larger effort to automate its standards development process—giving 24/7 access to information and forms that standard developers need to develop their standards in an effective and timely way.

You can visit the IEEE Standards Development Online site at **http://standards.ieee.org/resources/development/index.html**.

ICC Launches Online Subscription Service for Building Codes

The International Code Council (ICC) recently launched its eCodes® Online Subscription Service, providing easy access to the latest construction industry building and safety codes.

Subscribers to the new service may download an array of codes using the Adobe Acrobat eBook Reader® software. This free software enables you to read high-fidelity eBooks on your notebook or desktop computer - no special hardware is needed. After downloading, users may search quickly throughout the complete code, highlight passages, make annotations, create bookmarks, or have the text read aloud. Subscriptions vary in duration and price, and provide users with 24-hour-a-day access to the following codes:



- International Building Code
- International Residential Code
- International Fire Code
- International Plumbing Code
- International Mechanical Code
- International Fuel Gas Code
- International Energy Conservation Code
- International Private Sewage Code
- International Property Maintenance Code
- International Zoning Code
- Florida Building Code (Building, Fuel Gas, Plumbing, Mechanical, and Test Protocols)
- New York State Code (Building, Residential, Fire, Plumbing, Mechanical, Energy Conservation, Fuel Gas, and Property Maintenance)
- North Carolina Building Code

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ICC plans to release more eCodes in the near future. Visit **http://www.ecodes.biz** for complete subscription information, updates on the latest code additions, and free downloads of related documents. For more information call (205) 591-1853, ext. 268.

ASSE Publishes Standard on Safety Requirements for Workplace Floors and Stairs

The American Society of Safety Engineers (ASSE) recently published the American National Standard A1264.1-1995 (R-2002) *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*. The standard, first drafted in 1987, was re-approved June 6, 2002, by the American National Standards Institute (ANSI). It provides a workable guideline for safety professionals in helping reduce workplace falls, the second leading cause of on-the-job deaths.

The A1264.1 standard establishes the minimum safety requirements for walking and working areas, including ladders and fixed stairs, to ensure a safe working environment. The standard focuses on the major components of safe entryways including the requirements for fixed stairs, guardrails and handrails, and the requirements for protecting open-sided floors, platforms and runways. The standard also provides requirements for barriers and screens for wall openings as well as floor opening covers and treading for stairs.

A copy of the A1264.1 standard, order # 3318, is available online at **http://www.asse.org** or by calling ASSE customer service at (847) 699-2929.

ASME Seeks Candidates for Revision to Guidance Manual for Model Testing

ASME International's Performance Test Codes Committee is forming a standards committee for the purpose of revising PTC 19.23-1980, *Guidance Manual for Model Testing*. The current document provides a guide for the design and application of models in extension or supplementation of prototype tests of equipment. The standards committee would update the text for consistency with current practice and understanding of the subject, possibly including validation or anchoring analytical/numerical models.

The committee is seeking volunteer candidates for membership from those with industrial, academic, consulting, and government backgrounds. Members will be technically qualified individuals with the concern, willingness, and financial support to participate within the charter of ASME's Performance Test Codes Committee. Candidates should have an engineering or related science degree. The committee will meet in person once or twice a year, for a full day, with most of the draft preparation being done at home or office, or by teleconference.

Those interested in serving on the standards committee to revise PTC 19.23-1980 should contact George Osolsobe, (212) 591-8554, **osolsobeg@asme.org**. For more information on ASME standards committees, visit **http://www.asme.org/codes/**.

ASHRAE Leads Open Session on Overview of Standard 90.1

The Department of Energy (DOE) recently ruled that states must meet or exceed the requirements in the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) energy conservation standard. The DOE determined that Standard 90.1-1999 would achieve greater energy efficiency in buildings (except low-rise residential buildings) than Standard 90.1-1989, which was the previously referenced standard in the federal Energy Policy Act. As a result of this positive determination, all states have two years to adopt Standard 90.1-1999, or the subsequent 90.1-2001, or revise their codes to change the reference from the 1989 standard to the new ones. The standard now applies to both new commercial buildings and all major remodeling or renovation of existing commercial buildings.

According to ASHRAE, Standard 90.1 is at the core of energy codes throughout the world. Standard 90.1 provides for the minimum energy-efficient requirements for the design and construction of new buildings and their systems, new

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portions of buildings and their systems, and new systems and equipment in existing buildings. It also sets up criteria for determining compliance with these requirements. Placed under continuous maintenance upon publication of Standard 90.1-1999, the standard was updated in 2001 and is being revised for 2004.

Current efforts to improve Standard 90.1-2001, "Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings," will be presented in an open session at ASHRAE's 2003 Winter Meeting. The session also allows users of the standard to provide feedback and suggestions directly to the 90.1 committee. Registration for the ASHRAE meeting is not required to attend.

The session will be held from 3–5 p.m. on Sunday, January 26, 2003, at the Palmer House Hilton, Chicago. ASHRAE's Winter Meeting will take place January 25–29 in Chicago. The 90.1 session will take place after the technical program is completed on Sunday and before the start of the ASHRAE co-sponsored International Air-Conditioning, Heating, and Refrigerating Exposition on January 27–29.

For more information, visit **http://www.ashrae.org/**.

ISO Publishes Revised Version of Brochure on ISO 14000 Environmental Standards

The International Organization of Standardization (ISO) recently published a newly revised version of its free brochure on the ISO14000 family of environmental management standards. Experts participating in ISO Technical Committee 207—Environmental Management updated the 1998 version of the brochure, entitled *Environmental Management—The ISO 14000 Family of International Standards 2002*, especially for distribution at the World Summit on Sustainable Development held September 2–11, 2002, in Johannesburg, South Africa.

The ISO 14000 family is composed of standards related to environmental management systems and environmental management tools. Establishment and implementation of an organization's environmental management systems is of central importance in determining the organization's environmental policy, objectives, and targets. Environmental management tools exist to assist the organization in realizing its environmental policy, objectives, and targets.

The newly revised brochure provides a list of the ISO 14000 family of standards, ongoing work, and other ISO 14000 publications; the ISO 14000 family of standards in its entirety—two approaches to implementation; an outline of their application at the organizational level and to products and services; and the business benefits of ISO 14000. You can view the new brochure at **http://www.iso.org/iso/en/prods-services/otherpubs/pdf/iso14000.pdf**.

To learn more about ISO Technical Committee 207—Environmental Management, visit **http://www.tc207.org/home/index.html**.

Panel Discusses Integrating Standards in Higher Education Curricula

A panel discussion entitled "University Education and Research on Technical Standards" was held September 9, 2002, at Columbia University in New York City. The panel discussion was organized by the International Center for Standards Research (ICSR), in conjunction with the American National Standards Institute (ANSI) and the National Institute of Standards and Technology (NIST), and hosted by the Columbia Institute for Tele-Information (CITI). It was the first in a series of planned interactive panel discussions to provide academic, industry, and government representatives with a forum to build an agenda on how to introduce standards into higher education curricula and research strategies.

The panel's aim was to address the following key questions:

- How can the importance of strategic standardization management be best presented?
- How can the message be best delivered on campus; and in what schools or curricula?

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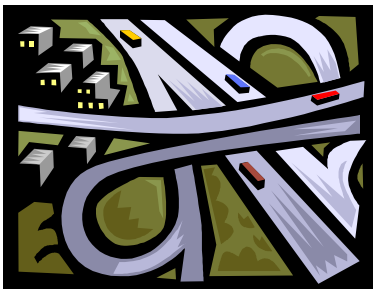
- Should, and if so, how can, standards-related topics be integrated into nonstandards or nontechnical courses?
- Should standards and standardization become an element of academic accreditation?
- What should be the agenda for academic research in standards and standardization?
- How can a standards research and education agenda be moved forward?

Moderator for the session was James Alleman of Columbia University. Presenters were Tim Schoechle, University of Colorado International Center for Standards Research; William Kelly, Catholic University Center for Global Standards Analysis; and George Arnold of Lucent Technologies and a vice-chairman of the ANSI Board of Directors.

The panel was comprised of representatives from the standards community, higher education, and government. It included Hugh Carter Donahue, Consultant (formerly Annenburg School of Communication); Frank Farance, Farance Inc.; John Kasdan, Columbia University; Jeff Strauss, Northwestern University, Kellogg School of Management; and Mary Saunders, NIST.

Panel members and attendees participated in a discussion about the current role of standards development and research in higher education, and offered suggestions on what might be done in the future to expand standards education at the university level. The group agreed that a reason for increasing awareness at the university level is that standardization as a profession has strategic importance for the U.S. economy, both nationally and internationally.

Other topics discussed were what types of standards research opportunities could be addressed at the university level, and how to develop opportunities for collaboration with academia, government, and industry. The panel concluded with the consensus that further discourse is needed to create an agenda for academic research in standards and standardization.



SDOs Collaborate to Develop Intelligent Transportation Technology Standards

Several American National Standards Institute (ANSI) members and ANSI-accredited standards developers, other industry groups, and agencies of both the federal and state government are collaborating their efforts to develop standards for intelligent transportation system (ITS) technology, sometimes referred to as “smart highways.”

U.S. Department of Transportation (DOT) experts predict that spending $10 billion on ITS technology such as traffic surveillance, signal control systems, and electronic toll collection would give the country two-thirds of the capacity that $150 billion in new roads would provide. More importantly, safety measures such as ramp metering have already reduced crashes by nearly 50 percent while handling 22 percent more traffic.

Collaboration on ITS activities began in 1996 when the Council of Standards Organizations (CSO), which was organized under the Intelligent Transportation Society of America's Committee on Standards and Protocols, brought together members from ITS-related standards developing organizations (SDOs), staff of ITS America (ITSA), and DOT officials. The purpose of the CSO is to make recommendations to the ITS Joint Program Office (JPO) of DOT ITS and the Federal Highway Administration of DOT regarding the standards program. They must also create resolutions for overlapping areas or boundaries between SDOs, identify gaps in standards development, and pinpoint standards needs based on new user services added to the ITS National Architecture. The group continues to provide a forum to address issues of common interest or concern for diverse ITS standards activities and assists in the coordination of their development. CSO membership is limited to SDOs only and is not open to private sector members.

In 1996, the DOT awarded $16 million to five SDOs to accelerate the standards development process. These organizations included the American Association of State Highway and Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), Society of Automotive Engineers (SAE), Institute of Electrical and Electronics Engineers (IEEE), and ASTM International.

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At present, completion schedules for necessary standards have been established, and the CSO has been monitoring the progress. Neil Schuster, president of ITSA, and Max E. Rumbaugh, Jr., executive vice-president emeritus of SAE, reported at a recent meeting of the Council of Engineering Society Executives that the development process has been successful. The report showed that a majority of standards was developed within reasonable time expectations. Fifty-six standards [have been published and] are now available for purchase, four have been approved, ten are in ballot, and twenty-one are in development. Rumbaugh and Schuster concluded that this unique experiment in collaboration by SDOs in the development of complex new technologies was and is a success. They encouraged the standards development community to further experiment in collaborations as a means to meet industry needs in appropriate situations such as ITS.

To learn more about the U.S. DOT ITS Standards Program, go to **http://www.its-standards.net/.** You can visit the ITSA Standards Web site at **http://www.itsa.org/standards.html**.

IEEE Forms Working Group to Develop Standards for Organic and Molecular Electronics

The Institute of Electrical and Electronics Engineers Standards Association (IEEE-SA) recently formed a new working group to develop standards for organic and molecular electronics. The first task of the IEEE P1620™ Working Group will be to formulate a standard for evaluating organic transistors, or organic field effect transistors (OFETs), which promise to deliver economical circuitry for high-volume applications not viable in silicon.

The flexibility, light weight, and low cost of OFETs suggest such near-term uses as roll-up flat panel displays, smart cards, and biometric sensors. As the technology continues to develop, OFETs have potential applications for radio-frequency tags for checking out groceries, tracing luggage at airports, and tracking people at secure installations.

The working group will develop standard methods for the characterization of organic and molecular transistors and materials. These methods will enable the creation of a testing and reporting standard that will be used by research through manufacturing as the technology is prepared for market introduction. Moreover, the standards will provide the necessary framework to ensure rigid procedures are followed for confirmation and validation of data created at different locations.

The IEEE P1620 standard, "Standard Test Methods for the Characterization of Organic and Molecular Transistors and Materials," is likely to be the first in a family of organic transistor standards that may encompass such areas as reliability, in-line testing, test equipment, and how to transfer research results to designers and others. Much of the work done on organic transistors should apply to the nascent field of molecular electronics, so P1620 subgroups are also expected to form to create standards for this field as it evolves.

Anyone with expertise in organic or molecular electronics, including their characterization, testing, design, layout, and manufacture, is invited to help develop the IEEE P1620 testing standard. Information on this working group and its activities is available online at **http://grouper.ieee.org/groups/1620/**.

ANS Publishes New Book on Advances in Plutonium Chemistry

The American Nuclear Society (ANS), with support from the University Research Alliance (Amarillo, TX), and the U.S. Department of Energy, Nuclear Materials Stewardship Program, has published a new book on plutonium chemistry. This multiauthored volume documents the advances in understanding of plutonium chemistry from 1967–2000. *Advances in Plutonium Chemistry 1967–2000* is intended as an authoritative and scholarly reference for the research chemist and for professors and upper-division undergraduate and graduate students in chemistry and related disciplines.

Because the advances in plutonium chemistry span a variety of subdisciplines, a group of internationally recognized experts in plutonium science was assembled to author the chapters. Topics covered in the book include the history, discovery, and use of plutonium; a summary of its currently know isotopes and their nuclear properties; the electronic structure of plutonium; redox and radiolysis reactions; organometallic and nonaqueous coordination chemistry; separations chemistry; environmental chemistry; plutonium in concentration

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solutions; plutonium in biological systems; crystalline solids and corrosion chemistry; glass, ceramics, and composites; and future directions.

In addition to the detailed technical content, Darleane Hoffman, senior editor for the volume, provides a summary identifying the opportunities as well as challenges that need to be addressed in both the theoretical interpretations and experimental investigations of the fundamental properties of plutonium. Hoffman points out that these continuing efforts will contribute not only to the solution of technological and societal problems of national and international importance, but will advance the fundamental knowledge of the exceedingly complex and exciting science of plutonium and the other actinides.

Advances in Plutonium Chemistry 1967–2000 (ANS Order # 300029, ISBN: 0-89448-039-1) is available on the ANS Web site at **http://store.ans.org/**.

NIST Issues Guidelines to Protect Fire and Rescue Personnel Responding to a Chemical, Biological, Radiological or Nuclear Attack

The Commerce Department's National Institute of Standards and Technology (NIST) has issued the first comprehensive set of basic procedures for decontaminating protective clothing and equipment of fire and rescue personnel responding to a chemical, biological, radiological or nuclear (CBRN) attack. The report, *Aid for Decontamination of Fire and Rescue Service Protective Clothing and Equipment after Chemical, Biological, and Radiological Exposures* (NIST Special Publication 981), was released September 19, 2002, at the National Homeland Security Technology Expo in Washington, DC.

While the concentration of a CBRN agent may be diminished greatly by the time fire and rescue personnel arrive at the scene, exposure to even a small amount of some toxic agents can contaminate clothing and equipment. If not carefully and properly decontaminated at the scene of the incident, first responders, or those who come in contact with their clothing or equipment, can become ill or die.

The new book details life saving procedures for emergency personnel as they battle chemical, biological, radiological, and nuclear elements. It is written in plain, easy-to-follow language and can be used as a primary reference at an emergency scene.

The report consolidates decontamination guidelines and procedures from a wide range of sources, including fiber and protective equipment manufacturers, fire departments, and U.S. government laboratories specializing in chemical, biological and radiological research. It includes information on decontamination basics and specific information on decontamination following either a chemical, biological, radiological or nuclear incident, or "worst-case" attacks with multiple agents. Detailed information on common CBRN agents is provided along with decontamination methods specific for each agent.

Aid for Decontamination of Fire and Rescue Service Protective Clothing and Equipment after Chemical, Biological, and Radiological Exposures was co-authored by Theodore L. Jarboe, a Montgomery County, MD, Fire and Rescue Service bureau chief and fire marshal, and J. Randall Lawson, a scientist in the NIST Building and Fire Research Laboratory. The U.S. Fire Administration funded and provided technical assistance in the development of the report.

NIST will distribute the report to several hundred of the nation's largest fire departments. You can download information in the report from **http://fire.nist.gov**. A limited number of reports are available by faxing or e-mailing a request to Ellen Altman, **ellen.altman@nist.gov**; fax: (301) 975-4052. Copies are also available from the National Technical Information Service (order number PB2003-100130), **http://www.ntis.gov**, (703) 605-6585; and the U.S. Government Printing Office (order number SN003-003-03752-4), **http://bookstore.gpo.gov**, (866) 512-1800.

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NIST Publishes New Computer Security Guides

The National Institute of Standards and Technology (NIST) has published four new computer security guides that are the latest in a continuing series designed to provide the federal government with timely information in countering cyber attacks. These four guides provide the latest NIST expertise on cyber security, and they support the agency's outreach efforts to promote wider awareness of the need for information technology (IT) security and an understanding of IT security vulnerabilities.

Topics covered by the four new guides include interconnecting IT systems (NIST Special Publication 800-47); procedures for handling security patches (NIST Special Publication 800-40); telecommuting and broadband security (NIST Special Publication 800-46); and the use of the Common Vulnerability and Exposures (CVE) vulnerability naming scheme (NIST Special Publication 800-51).

You can download the guides from NIST's Computer Security Resource Center (CSRC) at **http://csrc.nist.gov/publications**; click on "Special Publications."

Defense Department Chooses International Building Code for Military Construction

The U.S. Department of Defense (DoD) has selected the International Code Council's (ICC) International Building Code (IBC) as a primary reference in its Unified Facilities Criteria (UFC). *UFC 1-200-01, Design: General Building Requirements*, incorporates private sector standards, including the 2000 IBC, into a single model building code for design and construction of all military projects.

The 2000 IBC is part of a comprehensive, coordinated set of codes produced by the ICC that has been widely adopted by states and municipalities across the country. The IBC represents minimum standards that must be met by the private sector construction industry to safeguard public health and safety.

In 2000, DoD began to consolidate and unify its design and construction technical criteria. DoD established the Tri-Service Engineering Senior Executive Panel and Unified Design Guidance Coordinating Panel to help achieve its goal. The panels incorporated existing facility-related reference materials and utilized nongovernmental standards to the greatest extent possible. The military often requires higher standards to achieve more stringent lifecycle performance, and it constructs facilities that do not exist in the private sector. Modifications to the model code provisions are based on the military's unique requirements. States and municipalities also may add provisions to the codes to meet local needs.

For more information about the IBC and other codes produced by the ICC, go to **http://www.intlcode.org**. For a copy of UFC 1-200-01, visit **http://www.efdlant.navfac.navy.mil/criteria/ docuents/unified_facilities_criteria_new.htm** and click on "UFC Consolidated Index." Then, click on "Design: General Building Requirements" to download the document as a PDF file.

IEC and IEEE Agreement Enhances Development of Global Electrotechnical Standards

The International Electrotechnical Commission (IEC) and the Institute of Electrical and Electronics Engineers (IEEE) have signed a new cooperation agreement that seeks to enhance the creation of global technical standards. The agreement involves a dual-logo arrangement in which the logos of both organizations will appear on IEEE standards accepted and approved by the IEC.

Under the agreement, the IEC will evaluate new IEEE electronics, telecommunications, power generation, and other electrotechnical standards for international status. To begin

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with, the IEC and IEEE will identify IEEE standards candidates for the IEC's standardization process. The IEC Standardization Management Board will then decide which IEEE standards complement the IEC's technical work program. The chosen standards will be processed by IEC technical committees and published as IEC/IEEE Dual Logo International Standards, available for adoption by IEC member countries as their national standards.

According to Judy Gorman, Managing Director of the IEEE Standards Association (IEEE-SA), the agreement "sends industry a clear message that major technical standards developers are cooperating to create global standards and to eliminate the duplication that can entail unnecessary expenditures."

For additional information on the IEC, see **http://www.iec.ch/index.html**. Additional information about the IEEE and the IEEE-SA can be found at **http://www.ieee.org** and **http://www.standards.ieee.org**, respectively.

AWS Introduces Web-Based Welding Training

The American Welding Society (AWS), through a partnership with Trinity Industries and Impart Knowledge Systems, has adapted their popular welding inspection technology seminar into a Web-based tutorial called, *WeldAcademy Online*. *WeldAcademy Online* is a 10-module course that can benefit everyone involved in the welding industry, from supervisory and management personnel to welding design engineers, advanced welders, and entry level workers being trained to inspect their own work.

WeldAcademy Online provides a format that is both convenient and visually exciting, and it gives students and training administrators the flexibility to design the coursework to match the students' learning needs. The modules span the range of welding technology topics, including safe practices, welding and cutting processes, welding symbols, qualification, metallurgy, and inspection techniques.

To find out more about *WeldAcademy Online*, visit **http://www.weldacademy.com/**.

Upcoming Meetings and Conferences of Interest

December 3–5

DOE Quality Workshop

Embedded workshop: Session for individuals interested in forming a Welding Topical Committee, December 4. Contact Bill Harker, **harkerws@id.doe.gov** for more information on this session.

Alexis Park Hotel—Las Vegas, NV

Visit **http://www.orau.gov/qsm/QSMevents.htm** for more information.

January 12–16

ASTM Committee E10 Nuclear Technology and Applications Meeting

Hyatt Regency Hotel—Albuquerque, NM

Sponsored by Committee E10 of ASTM International.

Contact Jeff Adkins, **jadkins@astm.org**, or visit **http://www.astm.org**.

January 12–17

ASTM Committee C26 Nuclear Fuel Cycle Meeting

Hyatt Regency Hotel—Albuquerque, NM

Sponsored by Committee 26 of ASTM International.

Contact Jeff Adkins, **jadkins@astm.org**, or visit **http://www.astm.org** for more information.

January 25–29

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 2003 Winter Meeting

Palmer House Hilton—Chicago, IL

Visit **http://xp20.ashrae.org/frame.asp?MEET/meetmenu.htm** for more information or to register.

January 27–28

ASQ's Third Six Sigma Conference

Hyatt Grand Champions Resort—Indian Wells, CA

Sponsored by American Society for Quality (ASQ).

Visit **http://sixsigma.asq.org/** for more information.

January 27–29

International Air-Conditioning, Heating, Refrigerating Exposition

McCormick Place—Chicago, IL

Co-sponsored by ASHRAE and held in conjunction with the 2003 winter meeting.

Visit **http://www.ahrexpo.com** for more information.

February 4–7

IEEE 2003 Workshop and Tenth Annual Electrical Safety Workshop—"Electrical Safety Works! Principles and Practices for Incident-Free Performance"

Westin Galleria Hotel—Houston, TX

Sponsored by IEEE Petroleum and Chemical Industry Committee.

Visit **http://www.ieee-pcic.org/Subcommittees/safety/2003wksp.htm** for more information.

March 8–15

2003 IEEE Aerospace Conference

Big Sky Resort—Big Sky, MT

Visit **http://www.aeroconf.org/cgi-bin/start.asp** for more information.

March 10–11

ASQ's 10th Annual ISO 9000 Conference—Transition to the ISO 9000:2000 Series

Adam's Mark Dallas Hotel—Dallas, TX

Visit **http://www.asq.org/ed/conferences/iso/index.html** for more information.

March 10–14

ASQ 15th Annual Quality Management Conference

Hyatt Regency Hotel—Phoenix, AZ

Theme: "Rising to the Challenge"

Visit **http://www.asq-qmd.org/conference_1.html** for more information.

March 30–April 2

The 2003 International High-Level Radioactive Waste Management Conference

Texas Station Hotel—Las Vegas, NV

Theme: "Progress Through Cooperation"

Co-sponsored by the American Nuclear Society and Department of Energy.

Visit **http://www.ans.org** for more information.

March 30–April 3

AIChE 2003 Spring National Meeting and Process Industries Exposition

Ernest N. Morial Convention Center—New Orleans, LA

Sponsored by the American Institute of Chemical Engineers (AIChE).

Visit **http://www.aiche.org/conferences/spring/** for more information.